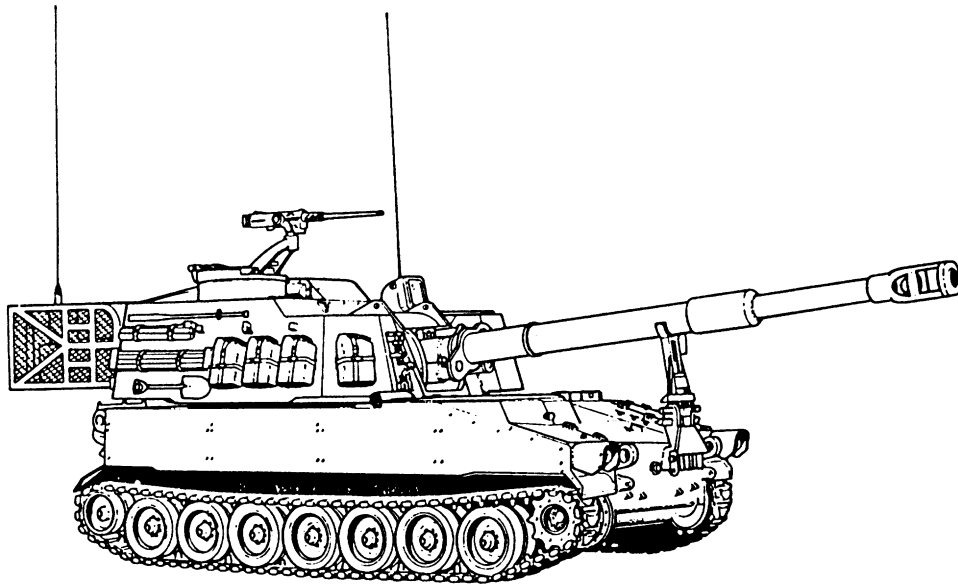


M109A6 PALADIN



SYSTEM IDENTIFIERS

| | |
|---------------|--|
| NOMENCLATURE: | Howitzer, Self-Propelled, Fully Tracked, 155mm (PALADIN) |
| SSN: | G24601 |
| LIN: | H57642 |
| NSN: | 2350-01-305-0028 |
| AMIM NO: | S615 |
| EIC: | 3E2 |
| FUEL TYPE: | Diesel |

SYSTEM DESCRIPTION

The M109A6 PALADIN is a self-propelled, fully tracked field artillery system. The aluminum and kevlar armored, air-transportable M109A6 has a 155mm gun with a hydraulic semi-automatic loader. It can fire up to eight rounds per minute and fires to a maximum range of 30 kilometers. It is equipped with a self location feature, remote control travel lock and digitized fire control. The M109A6's primary mission is to provide indirect support fire to armored or mechanized divisions. It is equipped with an automatic fire control system and is capable of firing nuclear artillery munitions. Secondary armament consists of an M2 .50 caliber machine gun. It has a crew of four (compared to a crew of six in older M109 models). The M109A6 is powered by a 8V-71T, 405 horsepower diesel engine. The PALADIN weighs 28 tons, and has a top speed of 35 miles per hour with a cruising range of 252 miles and a fuel capacity of 133 gallons.

The list below identifies components associated with the weapon/materiel system.

M109A6 PALADIN

| LIN | NSN | NOMENCLATURE |
|------------|------------------|-------------------------------------|
| A22496 | 1290-00-614-0008 | AIMING CIRCLE |
| A46470 | 5820-00-892-3342 | AMPLIFIER, AUDIO FREQ |
| A56243 | 4910-00-124-2554 | ANALYZER SET ENGINE, PORTABLE SOLID |
| C89070 | 1080-00-108-1173 | CAMOUFLAGE SCREEN SUPPORT |
| C89145 | 1080-00-103-1246 | CAMOUFLAGE SCREEN SYSTEM |
| C89213 | 1080-00-623-7295 | CAMOUFLAGE SCREEN SUPPORT |
| D81537 | 4230-01-133-4124 | DECONTAMINATING APPARATUS PORTABLE |
| E54166 | 1240-00-066-6065 | COLLIMATOR INFINITY AIMING REFERENC |
| K93373 | 5830-00-856-3273 | INTERCOMMUNICATION SET |
| L67021 | 1055-01-015-0874 | LAUNCHER, GRENADE, SMOKE |
| L91975 | 1005-00-322-9715 | MACHINE GUN, .50 CALIBER |
| M10936 | 4240-00-987-9597 | MASK, PROTECTIVE TANK |
| M18526 | 4240-01-258-0064 | MASK CHEMICAL BIOLOGICAL, COMBAT |
| M75577 | 1005-00-322-9716 | MOUNT, TRIPOD, MACHINE |
| N04456 | 5855-00-150-1820 | NIGHT VISION GOGGLES |
| N05482 | 5855-01-228-0937 | NIGHT VISION GOGGLE, AN/PVS-7B |
| Q03468 | 1290-00-891-9999 | QUADRANT FIRE CONTROL |
| Q38299 | 5820-00-857-0759 | RADIO SET, AN/PRC-77 |
| R31609 | 5820-01-234-8093 | RECEIVER-TRANSMITTER RADIO, RT-1523 |
| R44795 | 5820-01-151-9918 | RADIO SET AN/VRC-89 |
| V31211 | 5805-00-503-2775 | TELEPHONE SET, TA-43/PT |

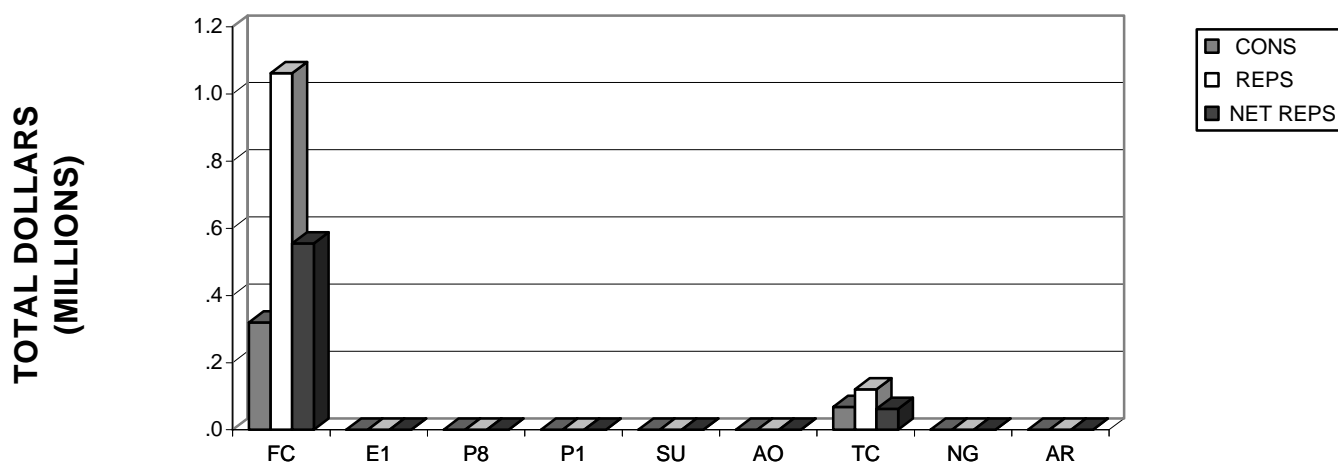
This summary provides an overview of FY 94 Total Army operating and support costs and other information for the weapon system. Average cost per system is displayed so the data can be used in performing analyses and cost studies. Average costs are calculated using the end item's density. NET REPARABLES represent the cost with the Major Subordinate Command (MSC) specific credit rates applied (detailed in Section 1 - Overview).

| |
|--|
| <p align="center">M109A6 PALADIN FY 94 TOTAL ARMY COST SUMMARY (FY 94 Constant Dollars)</p> |
|--|

| | | | | | | | | | | | | | | | | |
|--|---|-------------|-------|----------|--------------------|---------|------------|-----------------|-----------|------------|----------------------|-----------|------------|-----------------|-------------|-------------|
| <div>DENSITY</div> <div>NUMBER OF SYSTEMS71</div> | <div>DEPOT END ITEM MAINTENANCE (5.061)</div> <div>TOTAL\$0</div> <div>QUANTITY COMPLETED0</div> <div>AVG COST/END ITEM\$0.00</div> | | | | | | | | | | | | | | | |
| <div>CLASS III-POL (5.05)</div> <div>NOT AVAILABLE</div> | <div>DEPOT SECONDARY ITEM MAINTENANCE</div> <div>TOTAL\$254,529</div> <div>QUANTITY COMPLETED593</div> <div>AVG COST/SECONDARY ITEM\$429.22</div> | | | | | | | | | | | | | | | |
| <div>CLASS V-AMMUNITION (2.11)</div> <div>NOT AVAILABLE</div> | <div>INTERMEDIATE MAINTENANCE</div> <table><tr><td></td><td>DS/GS</td><td>CIVILIAN</td></tr><tr><td>MIL/CIV LABOR COST</td><td>\$4,983</td><td>\$0</td></tr><tr><td>AVG COST/SYSTEM</td><td>\$70.18</td><td>\$0.00</td></tr><tr><td>MAINTENANCE MANHOURS</td><td>300</td><td>0</td></tr><tr><td>MMHs/SYSTEM</td><td>4.23</td><td>0.00</td></tr></table> | | DS/GS | CIVILIAN | MIL/CIV LABOR COST | \$4,983 | \$0 | AVG COST/SYSTEM | \$70.18 | \$0.00 | MAINTENANCE MANHOURS | 300 | 0 | MMHs/SYSTEM | 4.23 | 0.00 |
| | DS/GS | CIVILIAN | | | | | | | | | | | | | | |
| MIL/CIV LABOR COST | \$4,983 | \$0 | | | | | | | | | | | | | | |
| AVG COST/SYSTEM | \$70.18 | \$0.00 | | | | | | | | | | | | | | |
| MAINTENANCE MANHOURS | 300 | 0 | | | | | | | | | | | | | | |
| MMHs/SYSTEM | 4.23 | 0.00 | | | | | | | | | | | | | | |
| <div>CLASS IX MATERIEL-PARTS (5.04/5.03)</div> <table><tr><td></td><td>FY 94</td><td>AVG COST</td></tr><tr><td></td><td>DOLLARS</td><td>PER SYSTEM</td></tr><tr><td>CONSUMABLES</td><td>\$388,154</td><td>\$5,466.96</td></tr><tr><td>NET REPARABLES</td><td>\$617,285</td><td>\$8,694.15</td></tr><tr><td>NET TOTAL COSTS</td><td>\$1,005,439</td><td>\$14,161.11</td></tr></table> | | | FY 94 | AVG COST | | DOLLARS | PER SYSTEM | CONSUMABLES | \$388,154 | \$5,466.96 | NET REPARABLES | \$617,285 | \$8,694.15 | NET TOTAL COSTS | \$1,005,439 | \$14,161.11 |
| | FY 94 | AVG COST | | | | | | | | | | | | | | |
| | DOLLARS | PER SYSTEM | | | | | | | | | | | | | | |
| CONSUMABLES | \$388,154 | \$5,466.96 | | | | | | | | | | | | | | |
| NET REPARABLES | \$617,285 | \$8,694.15 | | | | | | | | | | | | | | |
| NET TOTAL COSTS | \$1,005,439 | \$14,161.11 | | | | | | | | | | | | | | |

The following graph and table display FY 94 Class IX costs for consumables (CONS), reparable, (REPS), and net reparable (NET REPS) by MACOM. CONS and REPS are the total costs of requisitions recorded in the Logistic Intelligence File (LIF). NET REPS are the cost to the customer in the field and are calculated by applying an MSC-specific credit rate at the NSN level. TOTAL ARMY (TA) costs are the summation of costs across all MACOMs in the table. NET TOTAL COSTS are the sums of the costs of CONS and NET REPS. NUMBER OF SYSTEMS is the density recorded in the Continuing Balance System - Expanded (CBS-X). AVG PER SYSTEM costs are calculated by dividing the costs in NET TOTAL COSTS by the number of systems for each MACOM.

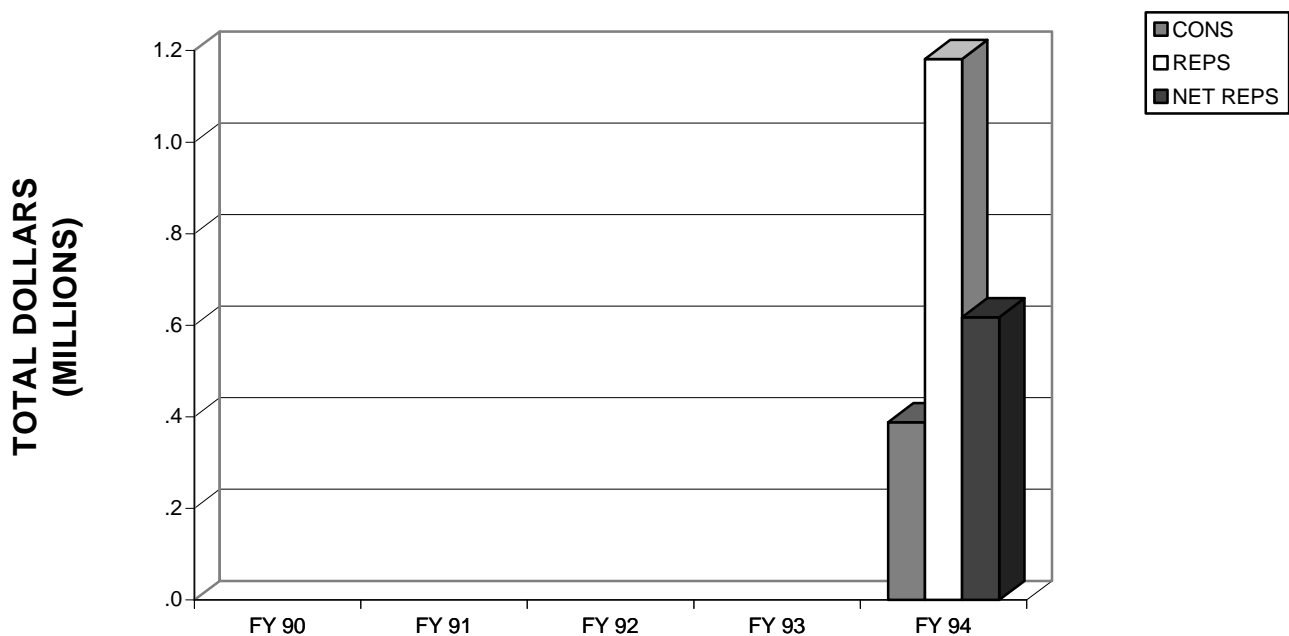
M109A6 PALADIN



| M109A6 PALADIN FY 94 MACOM CLASS IX COSTS | | | | | | | |
|--|------------|---------|-----------|----------|-----------------|-------------------|----------------|
| MACOM | | CONS | REPS | NET REPS | NET TOTAL COSTS | NUMBER OF SYSTEMS | AVG PER SYSTEM |
| CODE | NAME | | | | | | |
| FC | FORSCOM | 319,791 | 1,061,373 | 554,685 | 874,476 | 51 | 17,147 |
| E1 | USAREUR | 0 | 0 | 0 | 0 | 0 | 0 |
| P8 | EUSA | 0 | 0 | 0 | 0 | 0 | 0 |
| P1 | USARPAC | 0 | 0 | 0 | 0 | 0 | 0 |
| SU | USARSO | 0 | 0 | 0 | 0 | 0 | 0 |
| AO | USASOC | 0 | 0 | 0 | 0 | 0 | 0 |
| TC | TRADOC | 68,363 | 120,228 | 62,600 | 130,963 | 20 | 6,548 |
| NG | ARNG | 0 | 0 | 0 | 0 | 0 | 0 |
| AR | USAR | 0 | 0 | 0 | 0 | 0 | 0 |
| TA | TOTAL ARMY | 388,154 | 1,181,601 | 617,285 | 1,005,439 | 71 | 14,161 |

The following graph and table display FY 90-94 Class IX costs for consumables (CONS), reparable (REPS) and net reparable (NET REPS) by Total Army. The Total Army costs are a summation of all the MACOMs displayed on the previous page. CONS and REPS are the total cost of requisitions recorded in the Logistic Intelligence File (LIF). NET REPS are the cost to the customer in the field and are calculated by applying an MSC-specific credit rate at the NSN level. NET TOTAL COSTS are the sums of the costs of CONS and NET REPS. NUMBER OF SYSTEMS is the density recorded in the Continuing Balance System - Expanded (CBS-X). AVG PER SYSTEM costs are calculated by dividing the costs in NET TOTAL COSTS by the number of systems in the Total Army for the fiscal year. Blank rows indicate system was not tracked in the OSMIS database during that

M109A6 PALADIN



| M109A6 PALADIN FIVE YEAR TOTAL ARMY CLASS IX COSTS | | | | | | |
|---|---------|-----------|----------|-----------------|-------------------|----------------|
| FISCAL YEAR | CONS | REPS | NET REPS | NET TOTAL COSTS | NUMBER OF SYSTEMS | AVG PER SYSTEM |
| FY 90 | | | | | | |
| FY 91 | | | | | | |
| FY 92 | | | | | | |
| FY 93 | | | | | | |
| FY 94 | 388,154 | 1,181,601 | 617,285 | 1,005,439 | 71 | 14,161 |

The Total Army Class IX costs from the previous pages are broken out by Work Breakdown Structure (WBS) in the following table. The FY 94 WBS Class IX costs for consumables (CONS) and reparable (REPS) are the total cost of requisitions recorded in the Logistic Intelligence File (LIF). The NET REPS are the cost to the customer in the field and are calculated by applying an MSC-specific credit rate at the NSN level. The TOTAL costs are a summation of all the WBS elements displayed in the table. NET TOTAL COSTS are the sum of the costs in CONS and NET REPS. NUMBER OF SYSTEMS is the density recorded in the Continuing Balance System-Expanded (CBS-X). AVG PER SYSTEM costs are calculated by dividing the costs in NET TOTAL COSTS by the total number of systems in the Army.

| M109A6 PALADIN FY 94 TOTAL ARMY WORK BREAKDOWN STRUCTURE COSTS | | | | | | | |
|---|----------------------|---------|-----------|----------|-----------------|----------------|----------------|
| WBS | NAME | CONS | REPS | NET REPS | NET TOTAL COSTS | NUM OF SYSTEMS | AVG PER SYSTEM |
| 01 | HULL/FRAME | 79,172 | 13,824 | 7,179 | 86,351 | 71 | 1,216 |
| 02 | SUSPENSION/STEER | 33,297 | 1,453 | 754 | 34,051 | 71 | 480 |
| 03 | POWER PACKAGE | 71,327 | 487,274 | 252,894 | 324,221 | 71 | 4,566 |
| 04 | AUX AUTOMOTIVE | 62,134 | 6,589 | 3,453 | 65,587 | 71 | 924 |
| 05 | TURRET ASSEMBLY | 6,211 | 1,115 | 584 | 6,795 | 71 | 96 |
| 06 | FIRE CONTROL | 41,980 | 208,458 | 109,832 | 151,812 | 71 | 2,138 |
| 07 | ARMAMENT | 17,281 | 47,022 | 24,640 | 41,921 | 71 | 590 |
| 08 | BODY/CAB | 0 | 0 | 0 | 0 | 0 | 0 |
| 09 | AUTO LOADING | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | AUTO/REMOTE PILOT | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | NBC EQUIPMENT | 5,299 | 0 | 0 | 5,299 | 71 | 75 |
| 12 | SPECIAL EQUIPMENT | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | NAVIGATION | 0 | 210,612 | 110,360 | 110,360 | 71 | 1,554 |
| 14 | COMMUNICATIONS | 42,221 | 66,484 | 34,918 | 77,139 | 71 | 1,086 |
| 15 | VEH APP SOFTWARE | 0 | 0 | 0 | 0 | 0 | 0 |
| 16 | VEH SYS SOFTWARE | 0 | 0 | 0 | 0 | 0 | 0 |
| 17 | INT, ASSY, TEST, C/O | 0 | 0 | 0 | 0 | 0 | 0 |
| 18 | OTHER | 29,232 | 138,770 | 72,671 | 101,903 | 71 | 1,435 |
| | TOTAL | 388,154 | 1,181,601 | 617,285 | 1,005,439 | 71 | 14,161 |

The following table displays FY 90-94 Class IX costs by Work Breakdown Structure (WBS) for the Total Army. NET TOTAL COSTS are summation for all the WBS elements displayed on the previous page and are a sum of the costs of CONS and NET REPS. NUMBER OF SYSTEMS is the density recorded in the Continuing Balance System-Expanded (CBS-X). AVG PER SYSTEM costs are calculated by dividing the costs in NET TOTAL COSTS by the total number of systems in the Army for the fiscal year. Blank columns indicate system was not tracked in the OSMIS database

| M109A6 PALADIN | | | | | | |
|--|----------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| FIVE YEAR TOTAL ARMY WORK BREAKDOWN STRUCTURE COSTS | | | | | | |
| WBS | NAME | FY 90 NET TOTAL COSTS | FY 91 NET TOTAL COSTS | FY 92 NET TOTAL COSTS | FY 93 NET TOTAL COSTS | FY 94 NET TOTAL COSTS |
| 01 | HULL/FRAME | | | | | 86,351 |
| 02 | SUSPENSION/STEER | | | | | 34,051 |
| 03 | POWER PACKAGE | | | | | 324,221 |
| 04 | AUX AUTOMOTIVE | | | | | 65,587 |
| 05 | TURRET ASSEMBLY | | | | | 6,795 |
| 06 | FIRE CONTROL | | | | | 151,812 |
| 07 | ARMAMENT | | | | | 41,921 |
| 08 | BODY/CAB | | | | | 0 |
| 09 | AUTO LOADING | | | | | 0 |
| 10 | AUTO/REMOTE PILOT | | | | | 0 |
| 11 | NBC EQUIPMENT | | | | | 5,299 |
| 12 | SPECIAL EQUIPMENT | | | | | 0 |
| 13 | NAVIGATION | | | | | 110,360 |
| 14 | COMMUNICATIONS | | | | | 77,139 |
| 15 | VEH APP SOFTWARE | | | | | 0 |
| 16 | VEH SYS SOFTWARE | | | | | 0 |
| 17 | INT, ASSY, TEST, C/O | | | | | 0 |
| 18 | OTHER | | | | | 101,903 |
| | TOTAL | | | | | 1,005,439 |
| | NUM OF SYSTEMS | | | | | 71 |
| | AVG PER SYSTEM | | | | | 14,161 |

M109A6 PALADIN
TOP 40 COST DRIVERS
CLASS IX CONSUMABLES (NON-DLRs)

| | NSN | NOMENCLATURE | WBS | MRC | ARI | MATCAT | FY 94 AMDF UNIT PRICE | FY 94 QTY |
|-----|---------------|----------------------|-----|-----|-----|--------|--------------------------|--------------|
| 1. | 6110013279389 | REGULATOR,VOLTAGE | 04A | Z | | J2200 | 1,851.99 | 14.00 |
| 2. | 5855012466814 | WIRE BODY ASSEMBLY | 06E | Z | | G22SZ | 247.00 | 74.00 |
| 3. | 2530003973302 | PAD ASSEMBLY,TRACK | 02B | Z | | K22KF | 4.79 | 3,794.37 |
| 4. | 5855010343845 | IMAGE INTENSIFIER,N | 06E | Z | | G22SZ | 1,274.00 | 11.89 |
| 5. | 5985012972971 | ANTENNA | 14 | F | | G24RU | 255.00 | 57.00 |
| 6. | 2540013677587 | MOTOR,HYDRAULIC | 01H | Z | | J2200 | 3,694.95 | 3.00 |
| 7. | 5995013034951 | CABLE ASSEMBLY,SPEC | 14 | Z | | G22R2 | 512.00 | 18.00 |
| 8. | 2530008016702 | WHEEL SOLID RUBBER T | 02A | F | | K21MM | 289.00 | 31.41 |
| 9. | 4330013556038 | FILTER ELEMENT,FLUI | 18 | Z | | J2200 | 195.74 | 46.00 |
| 10. | 2910013021348 | TANK,FUEL,ENGINE | 03A | Z | | K24KF | 7,101.00 | 1.24 |
| 11. | 2920013504237 | CONTROLLER,GLOE PLU | 03A | Z | | J2200 | 4,399.35 | 1.60 |
| 12. | 2540013557750 | BOX,ACCESSORIES STO | 01H | F | | J2100 | 2,209.96 | 3.00 |
| 13. | 2530013213324 | ARM ASSEMBLY,PIVOT, | 03Q | F | | K24KF | 4,679.00 | 1.40 |
| 14. | 2530013154978 | SPINDLE,WHEEL,DRIVI | 03Q | F | | K24KF | 4,571.00 | 1.40 |
| 15. | 4140007563612 | FAN,VANEAXIAL | 18 | F | | K21KF | 1,103.00 | 4.85 |
| 16. | 4810013237141 | VALVE,SOLENOID | 01A | F | | J2200 | 4,294.04 | 1.00 |
| 17. | 5945013504104 | RELAY,ELECTROMAGNET | 04A | Z | | Q2200 | 1,172.56 | 3.00 |
| 18. | 5977013235398 | SEGMENT,RING,ELECTR | 04A | Z | | M24KF | 1,644.00 | 2.11 |
| 19. | 2530007990021 | PAD ASSEMBLY TRACK S | 02B | Z | | K22KF | 4.79 | 711.35 |
| 20. | 5365008611468 | RING,RETAINING | 01A | Z | | M22KF | 823.00 | 3.95 |
| 21. | 5365008611467 | RING,RETAINING | 01A | Z | | M22KF | 746.00 | 4.18 |
| 22. | 2590009336260 | ANCHOR SPADE,VEHICU | 01H | Z | | J2200 | 985.57 | 3.05 |
| 23. | 5895013560205 | MODEM,COMMUNICATION | 14 | H | | M24KF | 694.00 | 4.29 |
| 24. | 3040013509086 | HUB,RANGE CLUTCH,TR | 03K | Z | | J2200 | 1,424.76 | 2.00 |
| 25. | 1240001570762 | TELESCOPE ELBOW,CONS | 06E | H | | M21LD | 854.00 | 3.30 |
| 26. | 6150013675405 | CABLE ASSEMBLY,SPEC | 04A | Z | | J2200 | 1,401.50 | 2.00 |
| 27. | 2540013557676 | BASKET,ACCESSORIES | 01H | F | | J2100 | 2,756.55 | 1.00 |
| 28. | 6150013202705 | CABLE ASSEMBLY,SPEC | 05E | Z | | M24KF | 1,314.00 | 2.07 |
| 29. | 5945013553743 | SOLENOID,ELECTRICAL | 04A | Z | | Q2200 | 893.64 | 3.00 |
| 30. | 2520004751290 | PROPELLER SHAFT WIT | 03K | Z | | J2200 | 504.56 | 4.98 |
| 31. | 1025012960007 | BLOCK,FIRING GROUP | 07A | Z | | M22KF | 1,113.00 | 2.24 |
| 32. | 4810013564540 | VALVE,SOLENOID | 01A | Z | | J2200 | 1,221.93 | 2.00 |
| 33. | 5935013602630 | CONNECTOR ASSEMBLY, | 14 | F | | G21RU | 353.00 | 6.61 |
| 34. | 3040013509162 | BRACKET,EYE,NONROTA | 03K | Z | | J2200 | 776.76 | 3.00 |
| 35. | 1090008409552 | GRIP ASSEMBLY,CONTR | 07D | F | | M21KF | 2,536.00 | 0.91 |
| 36. | 6680013595376 | TACHOMETER,ELECTRIC | 01A | Z | | J2200 | 2,222.24 | 1.00 |
| 37. | 6150013168833 | WIRING HARNESS,BRAN | 04A | O | | K24KF | 2,171.00 | 0.97 |
| 38. | 6150013169255 | WIRING HARNESS,BRAN | 05E | O | | M24KF | 1,818.00 | 1.10 |
| 39. | 6150013153989 | WIRING HARNESS,BRAN | 04A | F | | K24KF | 1,244.00 | 1.58 |
| 40. | 2930013089191 | RADIATOR,ENGINE COO | 03G | F | | K24KF | 1,795.00 | 1.08 |

| | |
|-------------------|----|
| NUMBER OF SYSTEMS | 71 |
|-------------------|----|

NOTE: ROWS MAY NOT CALCULATE DUE TO ROUNDING

**M109A6 PALADIN
CONSUMABLES (NON-DLRs)**

| EXTENDED COST (QTY * UNIT PRICE) | AVERAGE COST | AVERAGE QUANTITY | FY 90-94 FIVE YEAR AVERAGE | |
|-------------------------------------|---------------|--------------------|-------------------------------|---------------|
| | PER SYSTEM | PER 100 SYSTEMS | QTY | EXTENDED COST |
| 25,927 | 365.17 | 19.7183 | | |
| 18,278 | 257.44 | 104.2254 | | |
| 18,175 | 255.99 | 5,344.1831 | | |
| 15,148 | 213.35 | 16.7465 | | |
| 14,535 | 204.72 | 80.2817 | | |
| 11,085 | 156.13 | 4.2254 | | |
| 9,216 | 129.80 | 25.3521 | | |
| 9,077 | 127.85 | 44.2394 | | |
| 9,004 | 126.82 | 64.7887 | | |
| 8,805 | 124.01 | 1.7465 | | |
| 7,039 | 99.14 | 2.2535 | | |
| 6,630 | 93.38 | 4.2254 | | |
| 6,551 | 92.27 | 1.9718 | | |
| 6,399 | 90.13 | 1.9718 | | |
| 5,350 | 75.35 | 6.8310 | | |
| 4,294 | 60.48 | 1.4085 | | |
| 3,517 | 49.54 | 4.2254 | | |
| 3,469 | 48.86 | 2.9718 | | |
| 3,408 | 48.00 | 1,001.9014 | | |
| 3,251 | 45.79 | 5.5634 | | |
| 3,118 | 43.92 | 5.8873 | | |
| 3,006 | 42.34 | 4.2958 | | |
| 2,977 | 41.93 | 6.0423 | | |
| 2,849 | 40.13 | 2.8169 | | |
| 2,818 | 39.69 | 4.6479 | | |
| 2,803 | 39.48 | 2.8169 | | |
| 2,757 | 38.83 | 1.4085 | | |
| 2,720 | 38.31 | 2.9155 | | |
| 2,681 | 37.76 | 4.2254 | | |
| 2,513 | 35.39 | 7.0141 | | |
| 2,493 | 35.11 | 3.1549 | | |
| 2,444 | 34.42 | 2.8169 | | |
| 2,333 | 32.86 | 9.3099 | | |
| 2,330 | 32.82 | 4.2254 | | |
| 2,308 | 32.51 | 1.2817 | | |
| 2,222 | 31.30 | 1.4085 | | |
| 2,106 | 29.66 | 1.3662 | | |
| 2,000 | 28.17 | 1.5493 | | |
| 1,966 | 27.69 | 2.2254 | | |
| 1,938 | 27.30 | 1.5211 | | |

| | | |
|---------|-------|--------|
| 239,540 | 61.7% | TOP 40 |
| 148,614 | 38.3% | OTHERS |
| ===== | | |
| 388,154 | | TOTAL |

M109A6 PALADIN
TOP 40 COST DRIVERS
CLASS IX REPARABLES (DLRs)

| | NSN | NOMENCLATURE | WBS | MRC | ARI | MATCAT | FY 94 AMDF UNIT PRICE | | FY 94 QTY |
|-----|---------------|---------------------|-----|-----|-----|--------|-----------------------|-----------|-----------|
| | | | | | | | W/O CREDIT | W/CREDIT | |
| 1. | 2520012821224 | TRANSMISSION ASSEI | 03H | H | R | K21KF | 74,217.00 | 38,518.62 | 3.42 |
| 2. | 1220013075524 | COMPUTER,BALLISTIC | 06F | D | | M24KF | 104,751.00 | 54,889.52 | 1.10 |
| 3. | 6605012298504 | DYNAMIC REFERENCE | 13 | D | | M24T3 | 105,306.00 | 55,180.34 | 1.00 |
| 4. | 6605013349447 | DYNAMIC REFERENCE | 13 | D | | M24T3 | 105,306.00 | 55,180.34 | 1.00 |
| 5. | 2520012821228 | TRANSFER TRANSMIS | 03H | H | R | K21KF | 21,948.00 | 11,391.01 | 3.84 |
| 6. | 2520008949533 | XMSN MDL XTG 411-2/ | 03H | H | R | K21KF | 61,118.00 | 31,720.24 | 1.00 |
| 7. | 5895013073943 | CONTROL,COMMUNIC | 14 | D | | M24KF | 53,872.00 | 28,228.93 | 1.10 |
| 8. | 7025013075519 | DISPLAY UNIT | 18 | D | | M24KF | 23,611.00 | 12,372.16 | 2.13 |
| 9. | 1025012943341 | PDIU ASSEMBLY | 07A | D | | M24KF | 20,143.00 | 10,554.93 | 2.13 |
| 10. | 1240001067754 | TELESCOPE,PANORAI | 06E | D | E | M21KF | 8,119.00 | 4,254.36 | 4.97 |
| 11. | 6130013075527 | CONTROL,POWER SUI | 18 | D | | M24KF | 55,374.00 | 29,015.98 | 0.71 |
| 12. | 7021013075525 | COMPUTER,DIGITAL | 18 | D | | M24KF | 24,128.00 | 12,643.07 | 1.42 |
| 13. | 2920013069406 | GENERATOR,ENGINE | 03A | D | | K24KF | 21,937.00 | 11,385.30 | 1.51 |
| 14. | 1240008712969 | MOUNT TELESCOPE T | 06E | D | C | M21KF | 17,396.00 | 9,115.50 | 1.55 |
| 15. | 5855012280942 | IMAGE INTENSIFIER,N | 06E | D | | G21SZ | 2,776.00 | 1,521.25 | 9.00 |
| 16. | 2815013354579 | ENGINE,DIESEL | 03A | H | R | K21KV | 31,132.00 | 16,157.51 | 0.64 |
| 17. | 2520008949535 | TRF XMSN F/M109 W/C | 03H | H | R | K21KF | 16,617.00 | 8,624.22 | 1.16 |
| 18. | 2540011695159 | HEATER,VEHICULAR,C | 01H | F | C | K21MC | 1,474.00 | 765.01 | 8.46 |
| 19. | 4140012845722 | FAN,VANEAXIAL | 18 | F | R | K21KF | 1,103.00 | 572.46 | 6.77 |
| 20. | 3010013303261 | ACTUATOR,ELECTRO- | 03L | D | | K24KF | 3,415.00 | 1,772.39 | 2.03 |
| 21. | 6105012973818 | MOTOR,DIRECT CURR | 04A | D | | M24KF | 4,673.00 | 2,448.65 | 1.41 |
| 22. | 4320013558489 | PUMP,AXIAL PISTONS | 18 | D | | M24KF | 6,650.00 | 3,484.60 | 0.97 |
| 23. | 5985011006403 | ANTENNA,RADAR CHF | 14 | D | C | M21LJ | 9,608.00 | 5,034.59 | 0.40 |
| 24. | 2520009649203 | FINAL DRIVE WITH CO | 03N | H | R | K21KF | 4,029.00 | 2,091.05 | 0.90 |
| 25. | 1025009677538 | BREECHBLOCK ASSEI | 07A | D | C | M21KF | 8,276.00 | 4,336.62 | 0.36 |
| 26. | 2930009216475 | DRIVE ASSEMBLY FAN | 03G | F | R | K21KF | 837.00 | 434.40 | 3.52 |
| 27. | 2920004751446 | GENERATOR ENGINE | 03A | F | R | K21KF | 1,327.00 | 688.71 | 1.31 |
| 28. | 2530013102237 | WHEEL,SOLID RUBBEI | 02A | D | R | K21MM | 138.00 | 71.62 | 9.89 |
| 29. | 2540011623834 | HEATER,VEHICULAR,C | 01H | F | C | K21MC | 1,424.00 | 739.06 | 0.86 |
| 30. | 1025009197277 | CYLINDER,RECUPERA | 07A | D | C | M21KF | 4,949.00 | 2,593.28 | 0.23 |
| 31. | 5999011073862 | CIRCUIT CARD ASSEM | 05E | D | C | M21LJ | 2,788.00 | 1,460.91 | 0.40 |
| 32. | 1290010982232 | PANEL ASSEMBLY,DIG | 06H | D | C | M21LJ | 6,020.00 | 3,154.48 | 0.14 |
| 33. | 5895013602623 | AMPLIFIER SUBASSEM | 14 | H | E | G24R9 | 540.00 | 295.92 | 1.11 |
| 34. | 5895012822851 | RECEIVER SUBASSEM | 14 | H | C | G21R9 | 1,571.00 | 860.91 | 0.38 |
| 35. | 5820011888818 | EXCITER,RADIO FREQ | 14 | D | | G21R9 | 1,029.00 | 563.89 | 0.52 |
| 36. | 3940012800872 | SLING,BEAM TYPE | 18 | D | | K21PQ | 361.00 | 187.36 | 1.45 |
| 37. | 4320008712834 | PUMP UNIT,CENTRIFU | 18 | F | C | K21JT | 694.00 | 360.19 | 0.66 |
| 38. | 5820012822846 | CONTROL,COUNTER | 14 | D | | G21R9 | 2,008.00 | 1,100.38 | 0.15 |
| 39. | 5998013501709 | CIRCUIT CARD ASSEM | 14 | D | E | G24R9 | 413.00 | 226.32 | 0.64 |
| 40. | 2990011512684 | TURBOSUPERCHARGI | 03A | H | R | K21KF | 765.00 | 397.04 | 0.36 |

| | |
|-------------------|----|
| NUMBER OF SYSTEMS | 71 |
|-------------------|----|

NOTE: ROWS MAY NOT CALCULATE DUE TO ROUNDING

**M109A6 PALADIN
REPARABLES (DLRs)**

| EXTENDED COST (W/CREDIT) (QTY * UNIT PRICE) | AVERAGE COST (W/CREDIT) | AVERAGE QUANTITY | FY 90-94 FIVE YEAR AVERAGE | |
|---|----------------------------|--------------------|-------------------------------|-----------------------------|
| | PER SYSTEM | PER 100 SYSTEMS | QTY | EXTENDED COST (W/CREDIT) |
| 131,733 | 1,855.39 | 4.8169 | | |
| 60,378 | 850.39 | 1.5493 | | |
| 55,180 | 777.18 | 1.4085 | | |
| 55,180 | 777.18 | 1.4085 | | |
| 43,742 | 616.08 | 5.4085 | | |
| 31,720 | 446.76 | 1.4085 | | |
| 31,052 | 437.35 | 1.5493 | | |
| 26,353 | 371.17 | 3.0000 | | |
| 22,482 | 316.65 | 3.0000 | | |
| 21,144 | 297.80 | 7.0000 | | |
| 20,601 | 290.15 | 1.0000 | | |
| 17,953 | 252.86 | 2.0000 | | |
| 17,192 | 242.14 | 2.1268 | | |
| 14,129 | 199.00 | 2.1831 | | |
| 13,691 | 192.83 | 12.6761 | | |
| 10,341 | 145.65 | 0.9014 | | |
| 10,004 | 140.90 | 1.6338 | | |
| 6,472 | 91.15 | 11.9155 | | |
| 3,876 | 54.59 | 9.5352 | | |
| 3,598 | 50.68 | 2.8592 | | |
| 3,453 | 48.63 | 1.9859 | | |
| 3,380 | 47.61 | 1.3662 | | |
| 2,014 | 28.37 | 0.5634 | | |
| 1,882 | 26.51 | 1.2676 | | |
| 1,562 | 22.00 | 0.5070 | | |
| 1,529 | 21.54 | 4.9577 | | |
| 902 | 12.70 | 1.8451 | | |
| 709 | 9.99 | 13.9296 | | |
| 636 | 8.96 | 1.2113 | | |
| 596 | 8.39 | 0.3239 | | |
| 584 | 8.23 | 0.5634 | | |
| 442 | 6.23 | 0.1972 | | |
| 329 | 4.63 | 1.5634 | | |
| 328 | 4.62 | 0.5352 | | |
| 293 | 4.13 | 0.7324 | | |
| 271 | 3.82 | 2.0423 | | |
| 237 | 3.34 | 0.9296 | | |
| 165 | 2.32 | 0.2113 | | |
| 144 | 2.03 | 0.9014 | | |
| 143 | 2.01 | 0.5070 | | |

| | | |
|---------|-------|--------|
| 616,420 | 99.9% | TOP 40 |
| 865 | 0.1% | OTHERS |
| ===== | | |
| 617,285 | | |

The following table summarizes FY 94 Depot Maintenance Costs from the Master File Maintenance (MFM). Depot maintenance costs are displayed by cost elements for end item maintenance and secondary item maintenance. The OTHER cost columns represent work categories such as progressive maintenance, renovation, and fabrication/manufacture. For reporting purposes, TRANSPORTATION costs recorded in the World Aircraft Logistics Conference (WALC)/Special Aircraft Assignment Mission (SAAM) records are shown in the OTHER maintenance category.

| M109A6 PALADIN FY 94 DEPOT MAINTENANCE COSTS | | | | | | | |
|---|----------------------|----------|-------|--------------|----------------------------|----------|---------|
| COST ELEMENTS | END ITEM MAINTENANCE | | | | SECONDARY ITEM MAINTENANCE | | |
| | REPAIR | OVERHAUL | OTHER | MODIFICATION | REPAIR | OVERHAUL | OTHER |
| CIVILIAN LABOR | 0 | 0 | 0 | 0 | 12,336 | 11,922 | 44,771 |
| MILITARY LABOR | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| MATERIEL | 0 | 0 | 0 | 0 | 27,183 | 8,548 | 61,428 |
| TRANSPORTATION | 0 | 0 | 0 | 0 | | | |
| OVERHEAD | 0 | 0 | 0 | 0 | 19,977 | 20,036 | 47,562 |
| CONTRACT | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| OTHER | 0 | 0 | 0 | 0 | 129 | 140 | 497 |
| TOTAL | 0 | 0 | 0 | 0 | 59,625 | 40,646 | 154,258 |
| QTY COMPLETED | 0 | 0 | 0 | 0 | 32 | 28 | 533 |
| AVG COST | 0 | 0 | 0 | 0 | 1,863 | 1,452 | 289 |

The table below summarizes FY 94 Intermediate Maintenance Costs from the Work Order Logistics File (WOLF) data. The labor hours and labor costs for Direct Support/General Support Intermediate Maintenance (DS/GS) and Civilian Maintenance are displayed by MACOM and Total Army. MACOM DS/GS LABOR COSTS are calculated by multiplying MACOM labor hours by the Army Manpower Cost System (AMCOS) E-5 composite standard rate (\$16.61). CIVILIAN LABOR COSTS are a summation from the source data.

| M109A6 PALADIN FY 94 INTERMEDIATE MAINTENANCE COSTS | | | | | |
|--|-------------------|-------------------|-----------------------|-----------------------|--------------------------|
| MACOM | DS/GS LABOR HOURS | DS/GS LABOR COSTS | CIVILIAN LABOR HOURS* | CIVILIAN LABOR COSTS* | CIVILIAN LABOR COST/HOUR |
| FORSCOM | 296 | 4,917 | 0 | 0 | 0.00 |
| USAREUR | 0 | 0 | | | |
| EUSA | 0 | 0 | | | |
| USARPAC | 0 | 0 | | | |
| USARSO | 0 | 0 | | | |
| USASOC | 0 | 0 | | | |
| TRADOC | 4 | 66 | 0 | 0 | 0.00 |
| ARNG | 0 | 0 | | | |
| USAR | 0 | 0 | | | |
| TOTAL ARMY | 300 | 4,983 | 0 | 0 | 0.00 |

*TRADOC LABOR HOURS and LABOR COSTS include contractor hours and costs.

The following table summarizes FY 90-94 Depot Maintenance Costs. The depot maintenance data are recorded in MFM. FY 94 costs are a summation of the cost elements displayed on the previous page. END ITEM OVERHEAD costs were not separately identified prior to FY 92. TRANSPORTATION costs are recorded in the WALC/SAAM records. Blank columns indicate system was not tracked in the OSMIS database during that fiscal year.

| M109A6 PALADIN FIVE YEAR DEPOT MAINTENANCE COSTS | | | | | | | | | | |
|---|-------------------------|-------|-------|-------|-------|-------------------------------|-------|-------|-------|---------|
| COST ELEMENTS | END ITEM MAINTENANCE | | | | | SECONDARY ITEM MAINTENANCE | | | | |
| | FY 90 | FY 91 | FY 92 | FY 93 | FY 94 | FY 90 | FY 91 | FY 92 | FY 93 | FY 94 |
| CIVILIAN LABOR | | | | | 0 | | | | | 69,029 |
| MILITARY LABOR | | | | | 0 | | | | | 0 |
| MATERIEL | | | | | 0 | | | | | 97,159 |
| TRANSPORTATION | | | | | 0 | | | | | |
| OVERHEAD | | | | | 0 | | | | | 87,575 |
| CONTRACT | | | | | 0 | | | | | 0 |
| OTHER | | | | | 0 | | | | | 766 |
| TOTAL | | | | | 0 | | | | | 254,529 |
| QTY COMPLETED | | | | | 0 | | | | | 593 |
| AVG COST | | | | | 0 | | | | | 429 |

The table below summarizes FY 90-94 Intermediate Maintenance Costs from WOLF. The fiscal year total costs for Direct/General Support Intermediate Maintenance (DS/GS) and Civilian Maintenance are displayed by MACOM and Total Army. MACOM DS/GS labor costs are calculated by multiplying MACOM labor hours by the Army Manpower Cost System (AMCOS) E-5 composite standard rate. DS/GS COST PER HR is the E-5 composite standard rate in FY 94 constant dollars. CIVILIAN LABOR COSTS are a summation from the source data. Blank columns indicate system was not tracked in the OSMIS database during that fiscal year.

| M109A6 PALADIN FIVE YEAR INTERMEDIATE MAINTENANCE COSTS | | | | | | | | | | |
|--|--|-------|-------|-------|-------|-------------------------------|-------|-------|-------|-------|
| MACOM | DIRECT/GENERAL SUPPORT INTERMEDIATE MAINTENANCE (DS/GS) | | | | | CIVILIAN MAINTENANCE (CIV) | | | | |
| | FY 90 | FY 91 | FY 92 | FY 93 | FY 94 | FY 90 | FY 91 | FY 92 | FY 93 | FY 94 |
| FORSCOM | | | | | 4,917 | | | | | 0 |
| USAREUR | | | | | 0 | | | | | |
| EUSA | | | | | 0 | | | | | |
| USARPAC | | | | | 0 | | | | | |
| USARSO | | | | | 0 | | | | | |
| USASOC | | | | | 0 | | | | | |
| TRADOC | | | | | 66 | | | | | 0 |
| ARNG | | | | | 0 | | | | | |
| USAR | | | | | 0 | | | | | |
| TOTAL ARMY | | | | | 4,983 | | | | | 0 |
| LABOR HRS | | | | | 300 | | | | | 0 |
| COST PER HR | | | | | 16.61 | | | | | 0.00 |

The following list shows the FY 94 Secondary Item - Rebuilds/Overhauls Cost Drivers recorded in the MFM. AVG COST TO REBUILD/OVERHAUL is calculated by dividing the costs in FY 94 TOTAL COST TO REBUILD/OVERHAUL by FY 94 QTY COMPLETED.

| M109A6 PALADIN FY 94 DEPOT SECONDARY ITEM MAINTENANCE - REBUILDS/OVERHAULS COST DRIVERS | | | | | |
|--|------------------|------------------------|--|---------------------------|-------------------------------------|
| NSN | NOMENCLATURE | FY 94 AMDF PRICE | FY 94 TOTAL COST TO REBUILD/ OVERHAUL | FY 94 QTY COMPLETED | AVG COST TO REBUILD/ OVERHAUL |
| 1240-00-106-7754 | TELESCOPE,PANORA | 8,119 | 31,094 | 11 | 2,827 |
| 4931-01-187-9713 | ALIGNMENT DEVICE | 737 | 6,226 | 12 | 519 |
| 1090-00-840-9552 | GRIP ASSEMBLY,CO | 2,536 | 3,255 | 4 | 814 |
| 1005-00-614-7463 | BOLT ASSEMBLY(A | 412 | 71 | 1 | 71 |

The following list shows the FY 94 Secondary Item Maintenance - Repairs Cost Drivers recorded in MFM. AVG COST TO REPAIR is calculated by dividing the costs in FY 94 TOTAL COST TO REPAIR by FY 94 QTY COMPLETED.

| M109A6 PALADIN FY 94 DEPOT SECONDARY ITEM MAINTENANCE - REPAIRS COST DRIVERS | | | | | |
|---|------------------|------------------------|----------------------------------|---------------------------|-----------------------|
| NSN | NOMENCLATURE | FY 94 AMDF PRICE | FY 94 TOTAL COST TO REPAIR | FY 94 QTY COMPLETED | AVG COST TO REPAIR |
| 1240-00-106-7754 | TELESCOPE,PANORA | 8,119 | 41,817 | 7 | 5,974 |
| 2920-00-475-1446 | GENERATOR ENGINE | 1,327 | 10,285 | 12 | 857 |
| 4931-01-187-9713 | ALIGNMENT DEVICE | 737 | 5,698 | 11 | 518 |
| 2540-01-169-5159 | HEATER,VEHICULAR | 1,474 | 1,825 | 2 | 913 |

The following list shows the FY 90-94 Secondary Item - Rebuild/Overhauls Cost Drivers recorded in MFM. These five year Cost Drivers were revised from previous years' reports, see Appendix A, Section 15 for further explanation. AVG COST TO REBUILD/OVERHAUL is calculated by dividing the costs in FY 90-94 TOTAL COST TO REBUILD/OVERHAUL by FY 90 -94 QTY COMPLETED.

| M109A6 PALADIN FIVE YEAR DEPOT SECONDARY ITEM MAINTENANCE - REBUILDS/OVERHAULS COST DRIVERS | | | | | |
|--|------------------|------------------------|---|------------------------------|-------------------------------------|
| NSN | NOMENCLATURE | FY 94 AMDF PRICE | FY 90-94 TOTAL COST TO REBUILD/ OVERHAUL | FY 90-94 QTY COMPLETED | AVG COST TO REBUILD/ OVERHAUL |
| 1240-00-106-7754 | TELESCOPE,PANORA | 8,119 | 31,094 | 11 | 2,827 |
| 4931-01-187-9713 | ALIGNMENT DEVICE | 737 | 6,226 | 12 | 519 |
| 1090-00-840-9552 | GRIP ASSEMBLY,CO | 2,536 | 3,255 | 4 | 814 |
| 1005-00-614-7463 | BOLT ASSEMBLY(A | 412 | 71 | 1 | 71 |

The following list shows the FY 90-94 Secondary Item - Repairs Cost Drivers recorded in MFM. These five year Cost Drivers were revised from previous years' reports, see Appendix A, Section 15 for further explanation. AVG COST TO REPAIR is calculated by dividing the costs in FY 90-94 TOTAL COST TO REPAIR by FY 90-94 QTY COMPLETED.

| M109A6 PALADIN FIVE YEAR DEPOT SECONDARY ITEM MAINTENANCE - REPAIRS COST DRIVERS | | | | | |
|---|------------------|------------------------|-------------------------------------|------------------------------|-----------------------|
| NSN | NOMENCLATURE | FY 94 AMDF PRICE | FY 90-94 TOTAL COST TO REPAIR | FY 90-94 QTY COMPLETED | AVG COST TO REPAIR |
| 1240-00-106-7754 | TELESCOPE,PANORA | 8,119 | 41,817 | 7 | 5,974 |
| 2920-00-475-1446 | GENERATOR ENGINE | 1,327 | 10,285 | 12 | 857 |
| 4931-01-187-9713 | ALIGNMENT DEVICE | 737 | 5,698 | 11 | 518 |
| 2540-01-169-5159 | HEATER,VEHICULAR | 1,474 | 1,825 | 2 | 913 |

CHOOSE A VOLUME FOR MORE SYSTEMS



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